

WHAT IS CLAIMED IS:

1. A high-efficiency controller of a gas-filled light producing tube,  
comprising
  - 5 a logic integrated circuit controlled and oscillated by the pulse width modulation, being provided for transforming direct electric currents supplied from a power source into signals in a form of outputs of high-frequency sine wave (1.414); and  
a power amplifying circuit and a transformer electrically connected to an  
10 output terminal of the logic integrated circuit controlled and oscillated by the pulse width modulation for supplying currents of voltages as needed by a load.
2. The high-efficiency controller of a gas-filled light producing tube as  
claimed in claim 1, wherein the load is a gas-filled light producing  
15 tube.
3. The high-efficiency controller of a gas-filled light producing tube as  
claimed in claim 1, wherein a subsidiary power circuit is connected to  
both the logic integrated circuit controlled and oscillated by the pulse  
width modulation and the transformer for loop-supplying  
20 continuously the currents to the power source.
4. The high-efficiency controller of a gas-filled light producing tube as  
claimed in claim 1, wherein an overload protective circuit is  
connected to both the logic integrated circuit controlled and oscillated

by the pulse width modulation and the transformer for making the logic integrated circuit controlled and oscillated by the pulse width modulation stop working when overload happens.

- 5        5. The high-efficiency controller of a gas-filled light producing tube as claimed in claim 1, wherein a idle disconnection circuit is connected to both the logic integrated circuit controlled and oscillated by the pulse width modulation and the transformer for making the logic integrated circuit controlled and oscillated by the pulse width modulation stop working in either one of a condition of power of the  
10        transformer being cut off and a condition of the transformer being in idle motion.
- 15        6. The high-efficiency controller of a gas-filled light producing tube as claimed in claim 1, wherein a grounding protective circuit is connected to both the logic integrated circuit controlled and oscillated  
by the pulse width modulation and the transformer for make the logic integrated circuit controlled and oscillated by the pulse width modulation stop working in either one of a grounding condition and  
human body's contact.
- 20        7. The high-efficiency controller of a gas-filled light producing tube as claimed in claim 1, wherein an external switch circuit is connected to a controlling device, and is connected to an input terminal of the logic integrated circuit controlled and oscillated by the pulse width modulation for effecting on and off of the logic integrated circuit

controlled and oscillated by the pulse width modulation.

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